Dermaptera from the Gunong Mulu National Park, Borneo

By A. Brindle *

The Gunong Mulu National Park was designated in 1975 by the Government of Malaysia for the conservation of an area of equatorial forest, including some spectacular limestone country, around the mountain of Gunong Mulu (2376 metres) in northern Sarawak. The establishment of the National Park has led to research in the area initiated by an expedition organized by the Royal Geographical Society and the Sarawak Forest Department, and among the results many new species of insects can be expected. Borneo is relatively little known as far as Dermaptera are concerned, although collections of these insects from Borneo have been recorded nearly fifty years ago (Borelli 1932). I am indebted to Mr. P. Chapman, of Bristol, and Dr. N. M. Collins, of the Centre for Overseas Pest Research, London, for the opportunity to examine specimens of earwigs recently collected in the Gunong Mulu National Park. The earwigs collected by Mr. Chapman (numbers 4, 6) are associated with caves near the south-western part of the Park, whilst those collected by Dr. Collins (numbers 1, 2, 3, 5, 7) are from forest, including an area on Gunong Mulu itself. A number of specimens are immature or females and cannot be adequately named but there are two new species described below. The purpose of the present paper is to list the species found as an initial contribution to the study of the insect fauna of the area.. The actual discoverers of new species are not always commemorated, so I am pleased to be able to name the two new species after their respective collectors.

In addition to the earwigs as listed, the most common, but repulsive insect on the mounds of bat guano in the limestone caves of the Park, is *Arixenia esau* Jordan, usually classed as belonging to the sub-order Arixenina of the Dermaptera (all earwigs in the usual sense belong to the sub-order Forficulina). *Arixenia* occurs in vast numbers and many have been collected by Mr. Chapman near the eastern entrance to Qua Payau (Deer Cave) alt. 100 m) in March and April 1978: specimens of these are now in the British Museum Natural History) (BMNH) and the Manchester Museum (MM).

Carcinophoridae

Brachylabiinae

1. **Brachylabis collinsi** sp. n.

Almost blackish-brown, shining; antennae with some distal segments yellowish-white (9-10 or with part of 8); femora pale at apices, tibiae and tarsi yellowish, tibiae sometimes darker basally. Cuticle very strongly, closely, and deeply punctured, rugose on head and pronotum, head rather less strongly punctured than pronotum where the punctures are large, deep, and almost in contact, the cuticle between the

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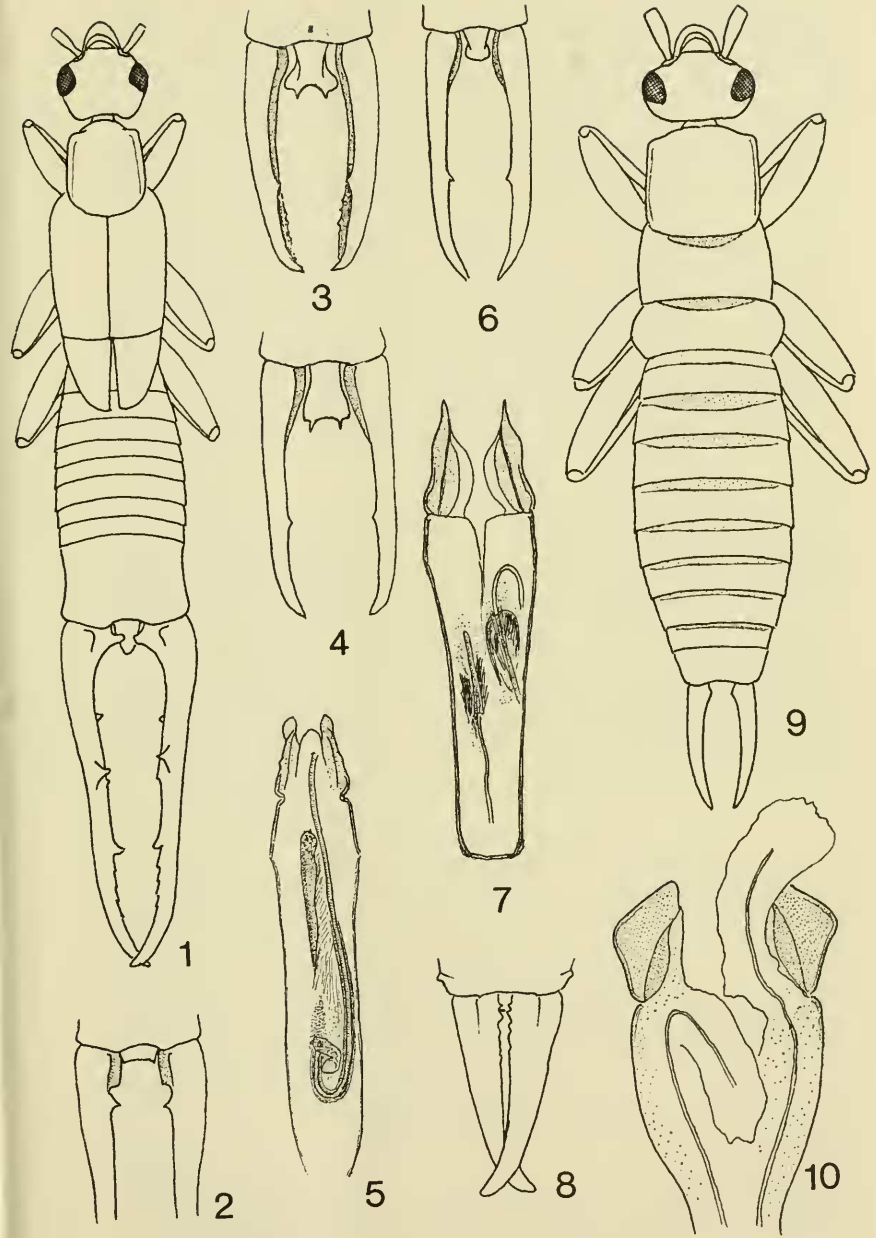
PLATE XIV



Figs. 1, 5, 8, *I. chapmani,* male, male genitalia, and female forceps. Figs. 2, 3, 4, 6, male forceps of *I. nitidipennis, I. bicuneatus, I. pygidiatus,* and *I. gracilis. Figs.* 7, 9, *B. collinsi,* male genitalia and male. Fig. 10, *G. oblita,* male genitalia.

punctures forming irregular ridges; mesonotum similar to pronotum but metanotum less rugose; each abdominal tergite with very large and deep punctures except anteriorly, the cuticle between the punctures not rugose but smooth and shining, puncturation strongest anteriorly; anterior part of each tergite, except first, finely punctured and on anterior tergites raised into transverse ridges contrasting with rest of cuticle; on posterior tergites the cuticle becomes less raised and more or less on a level with rest of tergite.

Male (fig. 9): head transverse, eyes very large; first antennal segment long, second transverse, segments 3-5 with ratio of length = 1¼ : 1-1¼ : 1¼-1½. Pronotum transverse, mesonotum with sides parallel, metanotum with sides curved. Legs long. Each branch of forceps almost cylindrical in cross section, slightly wider at base, simple. Posterior margin of penultimate sternite rounded with small median excision. Genitalia fig. 7. Length of body 7.5 mm, forcepts 1 mm.

Female: similar to male, puncturation and rugosities less prominent.

Holotype ♂, Sarawak, Gunong Mulu National Park, west ridge of Gunong Mulu in Lower Montane Forest (1,310 m), N. M. Collins (BMNH); allotype ♀ same data except in Mixed Dipterocarp Forest (500 m). Paratype ♂, data as allotype, except altitude 220 m February-March 1978.

Most genera of the Brachylabiinae were established on African species; most of these genera having now been synonymized (Brindle, 1978), so the above species is placed in *Brachylabis* as temporary measure. The species is distinct from all other known Oriental species by the very deeply and strongly punctured cuticle and the small size.

Carcinophorinae

2. *Gonolabis oblita* Burr

Gonolabis oblita Burr: Borelli, 1932: 181 (Sarawak).

Gunong Mulu National Park, in Mixed Dipterocarp Forest and Lower Montane Forest on west ridge of Gunong Mulu (130-1,130 m) February-March 1978, 2 ♂, 3♀, and immatures, N. M. Collins (BMNH and MM).

Also recorded from Java, Sumatra, and the Philippine Islands. The present identification is based on the similarity of the male genitalia (fig. 10) to that of *oblita* as figured in Burr (1915, fig. 7, pl. XII).

3. *Epilandex burri* (Borelli)

Epilandex burri (Borelli): Borelli 1932: 181 (Sandakan, Borneo).

Gunong Mulu National Park, Alluvial forest at the base of Gunong Mulu (65 m), February-March 1978, 1 ♀, N. M. Collins (BMNH).

Also recorded from Ceylon and Thailand.

Labiidae

4. *Parapericomus* sp.

Gunong Mulu National Park, Lubang Sungei Payau (Deer Water Cave) beneath cobbles covered with faeces of

cave swiftlets close to stream, March-April 1978, 3 ♀, P. Chapman (BMNH and MM).

The genus *Parapericomus* Ramamurthi (1967) is distinct in the Labiidae by having lateral longitudinal ridges on the elytra and the elytra being rugose and pubescent. The females of the only known species, *P. noonadanae* Ramamurthi, from the Bismarck Islands are different to the present females, but males are desirable before describing the present species as new.

5. *Auchenomus setulosus* Burr

Gunong Mulu National Park, Kerangas (tropical heath) forest, near the Melinau Gorge (190 m), February-March 1978, 1 ♂, N. M. Collins (BMNH).

Although this was synonymized with *A. javanus* (Bormans) in Burr (1911) there seems to be some doubt about the validity of this; the present male is referred to *setulosus* pending further study.

6. **Irdex chapmani** sp. n.

Dark brown, antennae and legs dark reddish-brown, forceps dark reddish. Head finely punctured, pronotum punctured but sparsely so on disc, elytra closely punctured, abdomen strongly and more closely punctured, almost rugose except last tergite which is nearly smooth. Cuticle pubescent, hairs arising from punctures, and hairs longer on pronotum and elytra than on head and abdomen, the hairs yellowish to brown, semi-erect, directed posteriorly.

Male (fig. 1): head transverse, eyes large; first antennal segment rather longer than distance between the antennal bases, second segment short, transverse; ratio of segments 3-5 = 2.5 : 2.25 : 2.5. Pronotum longer than broad, slightly widened posteriorly; elytra and wings fully developed. Pygidium conical. Forceps curved, inner side flattened with a dorsal and ventral edge, dorsal edge having a tooth near midpoint, ventral edge having a small tooth anteriorly and a larger one distally; beyond this tooth the edge is dentated. Penultimate sternite with posterior margin evenly rounded. Genitalia fig. 5. Length of body 12 mm, forceps 6.5 mm.

Holotype ♂, Sarawak, Gunong Mulu National Park, beneath rocks near south west entrance of Gua Payau (Deer Cave), the rocks covered with a thick wet deposit of guano of the bat *Tadarida mops,* March-April 1978, P. Chapman (BMNH).

Female: similar but without visible wings and abdomen retracted, forceps, fig. 8. Length of body 8 mm, forceps 3 mm.

The female is not designated as a paratype since the wings are not visible and the size is so much smaller, although this is mainly due to the retracted abdomen, and the forceps appear unusually long in proportion..

Borelli (1932) recorded a few species of *Irdex* from Borneo, two of which were new, and these species are separable by the shape of the male forceps (*nitidipennis* (Bor-

mans) fig. 2; *bicuneatus* Borelli, fig. 3; *pygidiatus* (Dubrony) fig. 4;*gracilis* Borelli fig. 6). There does seem to be some confusion with *stella* (Burr), whilst the pygidia of *bicuneatus* varies in shape and that of some specimens seems to be similar to that of *pygidiatus*. Clearly some revision is needed. The pygidium of *chapmani* (fig. 1) is unlike those of the other Borneo species and is similar to those of males from the Philippine Islands. *I. philipensis* Ramamurthi, however, was described from females which are much smaller (body 6.5 mm) than even the retracted female listed above. Some Philippine males are equal in size to *chapmani* but are distinct, amongst other features by the parallel-sided pronotum which is smaller than in *chapmani*.

Chelisochidae

7. *Hamaxas feae* (Bormans)

Hamaxas feae (Bormans): Borelli 1932: 190 (Sandakan, Borneo).

Gunong Mulu National Park, Lower Montane Forest on west ridge of Gunong Mulu (1,130 m), February-March 1978, 1 ♂, 2 ♀, N. M. Collins (BMNH and MM).

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SPATALISTIS BIFASCIANA (HBN.). — I beat out a rather worn specimen of this local Tortricoid from general foliage, at Cromers Wood, Sitingbourne, Kent, on July 13th 1979. — N. F. HEAL, "Fosters", Detling Hill, Maidstone.

ON FOODPLANTS OF SATURNIA PAVONIA L. — I noted with interest the observations of Mr. J. Briggs in a recent issue of this journal. Having worked the area he mentioned for several years, I was familiar with *pavonia* larvae feeding on Tormentil (*Potentilla erecta* L.). The normal foodplant in the area is, in my experience, heather (*Calluna vulgaris* L.), larvae being common on this in most years. Tormentil feeding was noted mainly in years when the heather was late in shooting, due to a dry spring or cold conditions. Perhaps ovipositing females lay on, or adjacent to Tormentil under such conditions?

Another foodplant not mentioned in P. B. M. Allan's *Larval Foodplants* is Great Burnet (*Sanguisorba officinalis*). This a regular foodplant with meadow Sweet (*Filipendula ulmaria*) on a marshy heath site in Oxfordshire. It would be interesting to know if *pavonia* also feeds in nature on other members of the Rosaceae family. — K. PORTER, 29, Snebro Road, Mirehouse, Whitehaven, Cumbria CA28 8DT.